

Southern Region Runway Safety Program

AIRCRAFT MAINTENANCE TECHNICIAN RUNWAY SAFETY TRAINING PROGRAM

Objective and Scope

This document provides guidance relating to Runway Safety and the overall training requirements for aircraft movement on an airport by maintenance personnel conducting taxi operations. This document provides a curriculum and course outline that could be used when reviewing or developing a training program for the purpose of aircraft taxi on an airport by personnel.

Training Program Concept

The training program may be characterized as a preplanned, organized course of instruction that when properly executed by the operator will reduce the possibility of runway incidents and standardize runway safety procedures by adequate trained personnel to perform duties in a safe manner.

Each program should encompass initial and recurrent training.

Each program should encompass a test standard and qualification standard for personnel that receives the required training.

Training Program Curriculum

The curriculum is a document that specifies the initial and recurrent training resources and materials available. The format should include a test as appropriate in all required subjects.

The training program curriculum should reflect training to the required qualification level (left seat, right seat, aircraft type, low visibility, etc.).

The training outline contained in this document provides information concerning the nature of the training and the subject areas that should be addressed within the training program.

The training curriculum should be reviewed using this document to assure all subject areas as appropriate have been incorporated in the runway safety training program.

The training curriculum should contain training for understanding and use of Jeppesen Charts, airport diagrams, and "High Alert" maps.

(This course was developed by Richard D. Mileham, Airworthiness Safety Program Manager, AGL-206)

Course Outline

(See Program Element Description Page)

AIR TRAFFIC

1. ATIS Explanation / Usage / NOTAMs
2. Radio Phraseology
3. Aviation Alphabet
4. Radio Communication Procedures (Per AIM)
5. Light Gun Signals

AIRPORTS

1. Runway Compass System
2. Airfield Markings
 - a. Runways
 - b. Taxiways
 - c. Movement Areas
 - d. Roadways
 - e. Ramp / Apron
3. Airfield Signage
 - a. Runway
 - b. Taxiways
 - c. Destination
 - d. Information
4. Airfield Lighting
 - a. Runway / touchdown / centerline / high speed / threshold
 - b. Taxiway / centerline / runway guard lights
5. Surface Movement Guidance and Control System
(For SMGCS airports with operations below 1200 RVR, only where applicable)

AIRPORT MAPS AND LAYOUT

1. Airport Layout / Taxi Diagram, if applicable
2. Airport Hot Spots
3. Landmarks
4. Roadways
5. Movement Areas
6. Construction Areas
7. Run-up Areas

OPERATION PROCEDURES

1. Cockpit Procedures (Aircraft specific)
 - a. Left and Right Seat Responsibilities
 - b. Sterile Cockpit
 - c. Airport Diagram Readily Available
 - d. Listen to ATIS / Current NOTAMs
2. Company Policies
 - a. Taxi Qualifications
 - b. Instructor Qualification
 - c. Training Requirements
 - d. Revision to Training Program
3. Pre-taxi Briefings (to include ground personnel, tug operator, marshals)
4. Taxi Procedures
5. Emergency Procedures (Loss of Situation Awareness)
6. Testing and Qualification Standards

ENVIRONMENTAL FACTORS

1. Weather / Low Visibility / Winter Operation
2. Airport Layout Complexity
3. Equipment / Radio Failure
4. Congestion / Traffic
5. Day / Night Operations

HUMAN FACTORS

1. Lessons Learned
2. Risk Assessment
3. Maintenance Personnel Duty Times

PROGRAM ELEMENT DESCRIPTIONS

ATIS Explanation & Usage

Overview of Airport Terminal Information System and instructions for use.

Air Traffic Control Radio Phraseology

Overview of proper phraseology when communicating with Airport Traffic Control Tower.

Aviation Alphabet

Overview of the phonetic alphabet that is use in radio communication.

Air Traffic Control Radio Communication Procedures

Procedures established by Air Traffic concerning radio frequencies, proper sequence in calling the controller.

Light Gun Signals

Overview of light gun signal use, color identification and instructions.

Runway Compass System

Overview explanation of runways identified by their magnetic compass heading.

Airfield Markings

Review of standard markings used on airport runways, taxiways and aprons.

Airfield Signage

Review of destination, information, taxiway and runway signage.

Airfield Lighting

Review of runway, edge, threshold, center line, touchdown and high-speed lighting. Review taxiway edge and center line lighting.

Surface Movement Guidance System (SMGCS)

Overview of system and enhanced visual aids (including taxiway centerline lights, stop bars, runway guard lights and clearance bars).

Airport Navigation Aids

Overviews of instrument landing system, localizer, and glideslope.

Airport Maps & Layout

Description of movement/non-movement areas, landmarks and staging areas.

Operation Procedures

Overview of operators specific operation procedures relative to runway safety.

Environmental Factors

Overview of factors to include weather, traffic, airport complexity, equipment failure, congestion and nighttime operations.

Human Factors

Overview of human factor issues that have contributed to previous runway safety issues based on operator's history and causal factors of runway incursions or incidents.

TRAINING AIDS

To obtain any of these resources,
contact Ft. Lauderdale Flight Standards District Office
954-356-7520
or
Southern Region Runway Safety Program Office
404-305-5557

VIDEOS

Aircraft Surface Movement

Basic presentation about airport markings, lighting and signs

Cockpit Resource Management

Introduction to METAR / TAR

Weather Terminology

Runway Incursions

Runway Incursions – The Unseen Danger

Developing and Presenting Effective Training

Ground Vehicle Radio Communications

Runway Incursion – 4 Scenarios

Runway Incursion Trigger Tapes

Runway Incursion Accidents

Airport Signs, Markings and Procedures

Driving on Airport Operation Areas

CD-ROM TRAINING PROGRAMS

Runway Signs, Markings and Procedures

FAA Taxi 101

ADVISORY CIRCULARS

91-73

Part 91 Pilot and Flightcrew Procedures During Taxi Operations

120-57A

Surface Guidance and Control System

- 120-74** Part 121, 125 and 135 Flightcrew Procedures During Taxi
- 90-67B** Light Signals from Ground Tower for Ground Vehicles, Equipment and Personnel
- 97-1A** Runway Visual Range
- 150 / 5200-28B** Notice to Airmen (NOTAMs) for Airport Operators
- 150 / 5340-1H** Standards for Airport Markings
- 150 / 5340 – 18C** Standards for Sign Systems
- 150 / 5340 – 28** Low Visibility Taxiway Lighting Systems

FAA Aeronautical Information Manual

HANDOUT MATERIALS

Surface Movement Guidance and Control System

Publication No. FAA / ASY-20 95/001

Pilot Guide to Airport Signs and Markings

Briefing Card

Surface Safety Pamphlet

Runway Incursions

Publication No. FAA / ASY-300 99/12/01

Airport Ground Vehicle Operations

Publication No. FAA / ASY-300 98/001

Stop Runway Incursions

Decal

Help Prevent Runway Incursions

Poster

Reducing the Number of Vehicle / Pedestrian Deviations at Your Airport

Publication

Ground Vehicle Guide to Airport Signs and Markings

Decal

AIRCRAFT TAXIING
GOOD OPERATING PRACTICES

- ASSIGN RESPONSIBILITIES FOR LEFT AND RIGHT SEAT AND GROUND CREW
- CURRENT NOTICE TO AIRMEN (NOTAMS)
- LISTEN TO ATIS
- THINK ABOUT WHAT YOU ARE GOING TO SAY BEFORE CALLING THE CONTROLLER
- CURRENT AIRPORT TAXI DIAGRAM READILY AVAILABLE; REVIEW AIRPORT HOT SPOT DIAGRAMS (IF APPLICABLE)
- WRITE DOWN YOUR ASSIGNED TAXI ROUTE
- XYZ MAINTENANCE CALL SIGN . . .
- NEVER ASSUME ANYTHING
- ALWAYS ASK FOR ASSISTANCE IF YOU HAVE ANY DOUBT ABOUT WHETHER TO PROCEED
- IF THE INSTRUCTIONS YOU RECEIVE FROM ATC ARE UNCLEAR, ASK THAT THEY BE REPEATED BY STATING, "SAY AGAIN"
- IF THERE IS ANYTHING ABOUT THE INSTRUCTION YOU DO NOT UNDERSTAND, ASK FOR FURTHER EXPLANATION
- REPEAT OR "READ-BACK" YOUR INSTRUCTIONS TO ATC
- ALWAYS KNOW YOUR EXACT LOCATION AND BE AWARE OF ACTIVITY AROUND YOU
- REALIZE YOU CAN BECOME DISORIENTED EVEN IN THE BEST CONDITIONS – WHEN DISORIENTED, STOP AND REQUEST ASSISTANCE . . . Make yourself visible, turn on ??? lights